

ABSTRACT

An air-powered projectile launcher. A double-acting piston within a pump tube is employed. A separate magazine tube is used to hold a plurality of projectiles. One end of the magazine tube feeds into a barrel assembly. The opposite end is closed by a one-way valve. The muzzle of the barrel is closed by a muzzle valve. When the piston is pulled through a back stroke, an air manifold directs the flow to induce a vacuum in the end of the magazine tube proximate the barrel. The vacuum closes the muzzle valve and opens the one-way valve on the opposite end of the magazine tube. The vacuum then pulls the first projectile into the barrel. When the piston is pushed through a forward stroke, pressure is directed behind the first projectile and in front of the second projectile. The second projectile is forced back into the magazine tube. The pressure within the magazine tube closes the one-way valve, effectively making the second projectile the base of a closed firing chamber. As the piston continues through its forward stroke, the first projectile is forced through the barrel. The muzzle valve flies open and the first projectile shoots out at substantial velocity. The piston is then ready for a new back stroke, which repeats the cycle.